The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

EQUATORIAL EDITION FEBRUARY 2013

Sky Calendar – February 2013

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2 **Moon very near Spica** (109° from Sun, morning sky) at 2h UT. Occultation visible in Madagascar and southern Africa.

3 **Moon near Saturn** (morning sky) at 7h UT. Mag. +0.5.

3 **Last Quarter Moon** at 13:57 UT.

5 **Moon near Antares** (67° from Sun, morning sky) at 6h UT.

7 **Moon at perigee** (closest to Earth) at 12h UT (365,318 km; 32.7').

8 **Mercury 0.27° NNW of Mars** (15° from Sun, evening sky) at 18h UT. Mags. −1.0 & +1.2.

9 **Moon near Venus** (12° from Sun, morning sky) at 10h UT. Mag. −3.9.

10 **New Moon** at 7:22 UT. Start of lunation 1115.

11 **Moon near Mars** (15° from Sun, evening sky) at 10h UT. Mag. +1.2.

11 **Moon near Mercury** (17° from Sun, evening sky) at 16h UT. Mag. −0.9.

16 **Mercury at greatest elongation**, 18° east of Sun (evening sky) at 21h UT. Mag. −0.5.

17 **First Quarter Moon** at 20:30 UT.

17 **Moon near the Pleiades** (evening sky) at 22h UT.

18 **Moon very near Jupiter** (evening sky) at 12h UT. Occultation visible in southern Australia. Mag. −2.4.

18 **Moon near Aldebaran** (evening sky) at 20h UT.

19 **Moon at apogee** (farthest from Earth) at 6h UT (distance 404,472 km; angular size 29.5').

23 **Moon near Beehive cluster (M44)** (evening sky) at 13h UT.

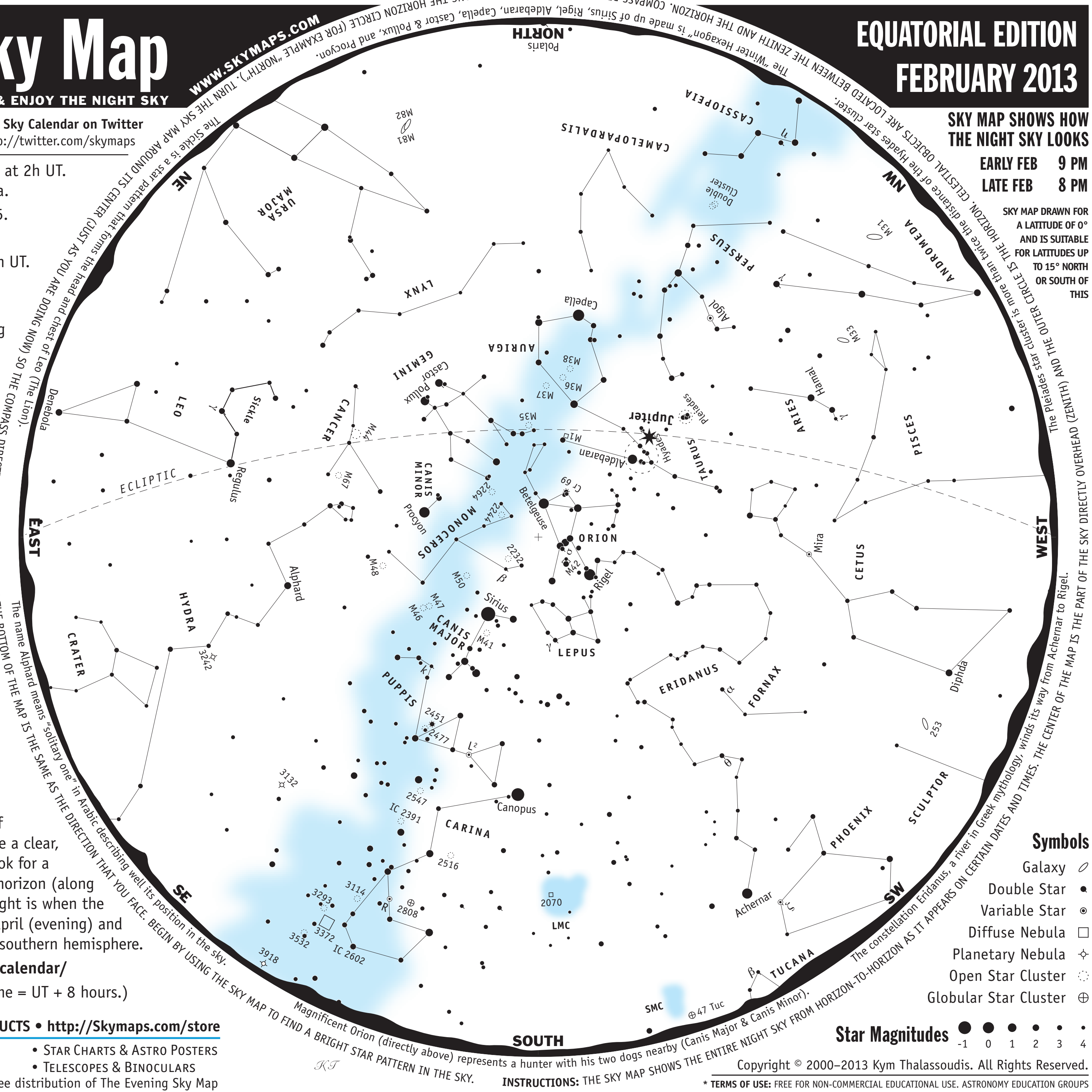
25 **Moon near Regulus** (midnight sky) at 6h UT.

25 **Full Moon** at 20:28 UT.

The Zodiacal Light is caused by sunlight reflected off meteoric dust in the plane of the solar system. Choose a clear, moonless night, about 1–2 hours after sunset, and look for a large triangular- shaped glow extending up from the horizon (along the ecliptic). The best months to view the Zodiacal Light is when the ecliptic is almost vertical at the horizon: March and April (evening) and October–November (morning); times reversed for the southern hemisphere.

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (Singapore Standard Time = UT + 8 hours.)



NORTH
Polaris
NE
NW
EAST
WEST
SE
SW
SOUTH
CASSIOPEIA
CAMELOPARDALIS
URSA MAJOR
M81
M82
LYNX
PERSEUS
Double Cluster
Algol
M31
ANDROMEDA
M33
TRIANGULUM
Capella
AURIGA
M36
M37
M38
GEMINI
Castor
Pollux
LEO
Sickle
Denebola
Regulus
CANCER
M44
M67
M35
Jupiter
Pleiades
Hyades
Aldebaran
M1
TAURUS
ARIES
Hamal
PISCES
ECLIPTIC
CANIS MINOR
Procyon
MONOCEROS
2264
2244
2232
Betelgeuse
Cr 69
ORION
M42
Rigel
M48
M50
Alphard
HYDRA
CRATER
3242
Sirius
M47
M46
CANIS MAJOR
M41
LEPUS
PUPPIS
2451
2477
ERIDANUS
FORNAX
CETUS
Mira
Diphda
253
SCULPTOR
3132
2547
IC 2391
Canopus
CARINA
2516
PHOENIX
3114
3293
2808
3372
3532
IC 2602
3918
2070
LMC
Achernar
TUCANA
SMC
47 Tuc
KT

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INSTRUCTIONS: THE SKY MAP SHOWS THE ENTIRE NIGHT SKY FROM HORIZON-TO-HORIZON AS IT APPEARS ON CERTAIN DATES AND TIMES. THE CENTER OF THE MAP IS THE PART OF THE SKY DIRECTLY OVERHEAD (ZENITH) AND THE OUTER CIRCLE IS THE HORIZON. CELESTIAL OBJECTS ARE LOCATED BETWEEN THE ZENITH AND THE HORIZON. COMPASS DIRECTIONS ARE INDICATED ALONG THE HORIZON CIRCLE (FOR EXAMPLE "NORTH"). TURN THE SKY MAP AROUND ITS CENTER (JUST AS YOU ARE DOING NOW) SO THE COMPASS DIRECTION THAT APPEARS ALONG THE BOTTOM OF THE MAP IS THE SAME AS THE DIRECTION THAT YOU FACE. BEGIN BY USING THE SKY MAP TO FIND A BRIGHT STAR PATTERN IN THE SKY.

The "Winter Hexagon" is made up of Sirius, Rigel, Aldebaran, Capella, Castor & Pollux, and Procyon.

The Pleiades star cluster is more than twice the distance of the Hyades star cluster.

The constellation Eridanus, a river in Greek mythology, winds its way from Achernar to Rigel.

Magnificent Orion (directly above) represents a hunter with his two dogs nearby (Canis Major & Canis Minor).

The name Alphard means "solitary one" in Arabic describing well its position in the sky.

The Sickle is a star pattern that forms the head and chest of Leo (The Lion).

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY FEB 9 PM
LATE FEB 8 PM

SKY MAP DRAWN FOR A LATITUDE OF 0° AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS

Symbols

Galaxy	⬯
Double Star	●
Variable Star	◉
Diffuse Nebula	☐
Planetary Nebula	✧
Open Star Cluster	◌
Globular Star Cluster	⊕

Star Magnitudes

●	●	●	•	•	·
-1	0	1	2	3	4

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CELESTIAL OBJECTS

EQUATORIAL EDITION

FEBRUARY 2013

About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary

Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

Constellation – A defined area of the sky containing a star pattern.

Diffuse Nebula – A cloud of gas illuminated by nearby stars.

Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

Ecliptic – The path of the Sun's center on the celestial sphere as seen from Earth.

Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

Galaxy – A mass of up to several billion stars held together by gravity.

Globular Star Cluster – A ball-shaped group of several thousand old stars.

Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.

Magnitude – The brightness of a celestial object as it appears in the sky.

Open Star Cluster – A group of tens or hundreds of relatively young stars.

Opposition – When a celestial body is opposite the Sun in the sky.

Planetary Nebula – The remnants of a shell of gas blown off by a star.

Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. Singapore Standard Time is UT plus 8 hours.

Variable Star – A star that changes brightness over a period of time.

Easily Seen with the Naked Eye

Capella	Aur	●	The 6th brightest star. Appears yellowish in color. Spectroscopic binary. Dist=42 ly.
Sirius	CMa	●	The brightest star in the sky. Also known as the "Dog Star". Dist=8.6 ly.
Procyon	CMi	●	Greek name meaning "before the dog" -- rises before Sirius (northern latitudes). Dist=11.4 ly.
Canopus	Car	●	Second brightest star in the sky. 14,000 times more luminous than the Sun. Dist=309 ly.
Achernar	Eri	●	Brightest star in Eridanus, The River. Arabic name meaning "end of river". Dist=144 ly.
Castor	Gem	◕	Multiple star system with 6 components. 3 stars visible in telescope. Dist=52 ly.
Pollux	Gem	●	With Castor, the twin sons of Leda in classical mythology. Dist=34 ly.
Regulus	Leo	●	Brightest star in Leo. A blue-white star with at least 1 companion. Dist=77 ly.
Rigel	Ori	●	The brightest star in Orion. Blue supergiant star with mag 7 companion. Dist=770 ly.
Betelgeuse	Ori	●	One of the largest red supergiant stars known. Diameter=300 times that of Sun. Dist=430 ly.
Algol	Per	◉	Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2.867 days.
Pleiades	Tau	◌	The Seven Sisters. Spectacular cluster. Many more stars visible in binoculars. Dist=399 ly.
Hyades	Tau	◌	Large V-shaped star cluster. Binoculars reveal many more stars. Dist=152 ly.
Aldebaran	Tau	●	Brightest star in Taurus. It is not associated with the Hyades star cluster. Dist=66.7 ly.
Polaris	UMi	◕	The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist=433 ly.

Easily Seen with Binoculars

M38	Aur	◌	Stars appear arranged in "pi" or cross shape. Dist=4,300 ly.
M36	Aur	◌	About half size of M38. Located in rich Milky Way star field. Dist=4,100 ly.
M37	Aur	◌	Very fine star cluster. Discovered by Messier in 1764. Dist=4,400 ly.
M44	Cnc	◌	Praesepe or Beehive Cluster. Visible to the naked eye. Dist=590±20 ly.
M41	CMa	◌	First recorded observation by Aristotle in 325 BC as "cloudy spot". Dist=2,300 ly.
2516	Car	◌	Spectacular open star cluster of 100 stars spaning 1/2 deg. Dist=1,300 ly.
2808	Car	⊕	Located 4 deg W of Nu Carinae. Visible to the naked eye on clear nights.
Mira	Cet	◉	Famous long period variable star. Mag varies between 3.0 & 10.1 over 332 days.
LMC	Dor	⬯	Large Magellanic Cloud. A neighbouring galaxy of the Milky Way. Dist=180,000 ly.
M35	Gem	◌	Fine open cluster located near foot of the twin Castor. Dist=2,800 ly.
M48	Hya	◌	12+ stars in 7x binoculars. Triangular asterism near centre. Dist=1,990 ly.
γ Leporis	Lep	◕	Visible with binoculars. Gold & white stars. Mags 3.6 & 6.2. Dist=30 ly. Sep=96.3".
2232	Mon	◌	A large scattered star cluster of 20 stars. Dist=1,300 ly.
2244	Mon	◌	Surrounded by the rather faint Rosette Nebula. Dist=5,540 ly.
M50	Mon	◌	Visible with binoculars. Telescope reveals individual stars. Dist=3,000 ly.
Cr 69	Ori	◌	Lambda Orionis Cluster. Dist=1,630 ly.
M42	Ori	□	The Great Orion Nebula. Spectacular bright nebula. Best in telescope. Dist=1,300 light years.
Double Cluster	Per	◌	Double Cluster in Perseus. NGC 869 & 884. Excellent in binoculars. Dist=7,300 ly.
L^2	Pup	◉	Semi-regular variable. Magnitude varies between 2.6 & 6.2 over 140.42 days.
M47	Pup	◌	Bright star cluster. 15+ stars in 7x binoculars. Dist=1,500 ly.
M46	Pup	◌	Dist=5,400 ly. Contains planetary NGC 2438 (Mag 11, d=65") -- not associated.
2451	Pup	◌	30+ stars in binoculars. The brightest star, χ Puppis, is red. Dist=850 ly.
2477	Pup	◌	Very rich but distant star cluster (4,200 ly). Resembles globular through binoculars.
SMC	Tuc	⬯	Small Magellanic Cloud. Companion galaxy to Milky Way. Requires dark sky. Dist=210,000 ly.
2547	Vel	◌	Fine open cluster visible through binoculars. Dist=1,300 ly.
IC 2391	Vel	◌	Omicron Velorum Cluster. Superb object for binoculars. Dist=450 ly.

Telescopic Objects

γ Andromedae	And	◕	Attractive double star. Bright orange star with mag 5 blue companion. Sep=9.8".
M67	Cnc	◌	Contains 500+ stars mag 10 & fainter. One of the oldest clusters. Dist=2,350 ly.
2070	Dor	□	Tarantula Nebula. A bright nebula located in LMC. A star-forming region.
θ Eridani	Eri	◕	Striking blue-white double star. Mags 3.2 & 4.3. Visible in a small telescope. Sep=8.2".
3242	Hya	✧	Ghost of Jupiter. Bright blue disk. Mag 11 central star. Dist=2,600 ly.
γ Leonis	Leo	◕	Superb pair of golden-yellow giant stars. Mags 2.2 & 3.5. Orbit=600 years. Sep=4.4".
β Monocerotis	Mon	◕	Triple star. Mags 4.6, 5.0 & 5.4. Requires telescope to view arc-shape. Sep=7.3".
2264	Mon	◌	Christmas Tree Cluster. Associated with the Cone Nebula. Dist=2,450 ly.
σ Orionis	Ori	◕	Superb multiple star. 2 mag 7 stars one side, mag 9 star on other. Struve 761 triple in field.
k Puppis	Pup	◕	Telescope easily shows two blue-white stars of almost equal brightness. Sep=9.9".
M1	Tau	□	Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 ly.
3132	Vel	✧	One of the brightest planetaries. Magnitude 10 central star. Dist=2,600 ly.

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